Work Order ID 95404 *95404*

January-09-13 1:00:24 PM

Item ID: D3651-13 **Accept** *N900040100* **Setup** **Start** *NS1* **Stop** *NS2*

Revision ID:

Item Name: Outside Doubler

Start Date: 1/09/13 **Start Qty:** 6.00 *6* **Cust Item ID:**

Required Date: 1/30/13 **Req'd Qty:** 6.00 *6* **Customer:**

Reference:

Run **Start** *NR1* **Stop** *NR2*

Approvals: **Process Plan:** MLJ **Date:** 13-01-10 **Tooling:** ____ **Date:** ____

QC: ____ **Date:** ____ **SPC (Y/N):** ____ **Date:** ____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr D3651	**Revision Nbr** Rev B								
100 *100* Waterjet FLOW CNC Waterjet 304. 08	FLOW WATER JET **Memo** 1-Cut as per Dwg D3651 Dwg Rev: B Prog Rev: B 2- Deburr if necessary	0.00 0.00				10	0		JM 13-2-13
110 *110* QC Quality Control	QC2- Inspect parts off machine FAI/FAIB **Memo**	0.00 0.00				10	0		JM 13-2-13
120 *120* QC Quality Control	QC8- Inspect parts - second check **Memo**	0.00 0.00 DAS 15 9-89 13.2.13				10			

DQA: ________ Date: ____________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order: ____________ Part No. ____________ NCR No. ____________	**DISPOSITION** Rework ☐ Scrap ☐ Use-as-is ☐ Work Order Update ☐	**AGAINST DEPARTMENT/PROCESS** Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐ Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐ Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐ Large Fab ☐ Composite ☐ Supplier ☐ ☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	**General**			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other ____
☐ Ripples in Bend	☐ Drill Holes	☐ Offset	____	
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration	____	
☐ Turning Sequence	☐ Finish	☐ Out of Sequence	____	
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		

Work Order ID 95404 *95404*

January-09-13 1:00:24 PM

Item ID: D3651-13 **Accept** *N900040100* **Setup Start** *NS1*

Revision ID: **Stop** *NS2*

Item Name: Outside Doubler

Start Date: 1/09/13 **Start Qty:** 6.00 *6* **Cust Item ID:**

Required Date: 1/30/13 **Req'd Qty:** 6.00 *6* **Customer:**

Reference:

Run Start *NR1* **Stop** *NR2*

Approvals: **Process Plan:** ________ **Date:** ________ **Tooling:** ________ **Date:** ________

QC: ________ **Date:** ________ **SPC (Y/N):** ________ **Date:** ________

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Identify as per dwg & Stock Location:_______	0.00							
130 Packaging Packaging	Memo ~~S1305~~ S1188	0.00					4 3/2/14		(stamp)
140	QC21- Final Inspection - Work Order Release	0.00							
140 QC Quality Control	Memo	0.00					13/2/14		(signature)

MK

13-2-14

DQA: ________ Date: ____________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order: ____________	DISPOSITION	AGAINST DEPARTMENT/PROCESS			
Part No. ____________	Rework ☐	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
NCR No. ____________	Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
	Use-as-is ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
	Work Order Update ☐	Large Fab ☐	Composite ☐	Supplier ☐	☐

Root Cause		Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data	☐									
Equip/Tooling	☐									
Operator	☐									
Material	☐									
Setup	☐									
Other	☐									
Process	☐									
Supplier	☐									
Training	☐									
Unapproved	☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other
☐ Ripples in Bend	☐ Drill Holes	☐ Offset	____________	
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration	____________	
☐ Turning Sequence	☐ Finish	☐ Out of Sequence	____________	
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		

Picklist Print

January-09-13 1:00:23 PM

Work Order ID: 95404

Parent Item: D3651-13

Parent Item Name: Outside Doubler

Start Date: 1/09/13 **Required Date:** 1/30/13

Start Qty: 6.00 **Required Qty:** 6.00

Comments:
IPP Rev:A New Issue 07-09-27 DD verified by: EC
IPP Rev:B ECN 1113P 08-01-22 DD
IPP Rev:C ecn1162 08-04-02 DD verified by: EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M304S26GA 304/316 0.018 SHEET		Purchased	No			100	sf	303.3400	**0.68**	~~4.294737~~ 7			Jm 3-2-13

Location		Loc Qty	Loc Code	
MAT020		303.34		
	117798	69.28		
	122753	97.06		
	123135	137		123135

DQA: ________ Date: ______________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order: ______________	**DISPOSITION**	**AGAINST DEPARTMENT/PROCESS**			
Part No. ______________	Rework ☐	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
NCR No. ______________	Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
	Use-as-is ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
	Work Order Update ☐	Large Fab ☐	Composite ☐	Supplier ☐	☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	**General**			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped.	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other ______
☐ Ripples in Bend	☐ Drill Holes	☐ Offset		
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration		
☐ Turning Sequence	☐ Finish	☐ Out of Sequence		
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		

DART AEROSPACE LTD	Work Order:	95404
Description: Outside Doubler	Part Number:	D3651-13
Inspection Dwg: D3651 Rev: B		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

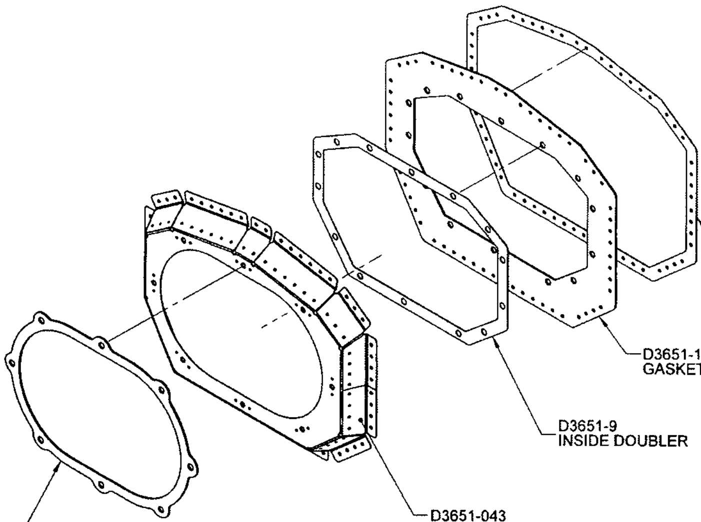
[X] First Article [ ] Prototype

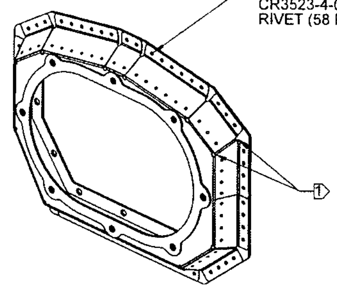
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.129	+0.005/-0.001	0.131"	–		V	Jkwo1
0.260	+/-0.010	0.263"	–		V	
2.471	+/-0.010	2.475"	–		V	
9.791	+/-0.010	9.794"	–		V	Producer
0.634	+/-0.010	0.637"	–		V	
2.564	+/-0.010	2.567"	–		V	
0.52	+/-0.030	0.527"	–		V	
0.600	+/-0.010	0.600"	–		V	
0.500	+/-0.010	0.501"	–		V	
7.969	+/-0.010	7.971"	–		V	
2.348	+/-0.010	2.352"	–		V	
0.480	+/-0.010	0.479"	–		V	
5.571	+/-0.010	5.578"	–		V	
0.696	+/-0.010	0.701"	–		V	
7.049	+/-0.010	7.053"	–		V	
3.564	+/-0.010	3.571"	–		V	
0.694	+/-0.010	0.699"	–		V	
1.779	+/-0.010	1.782"	–		V	
8.74	+/-0.030	8.751"	–		V	

Measured by:	JM	Audited by:	DAS 15	Prototype Approval:	N/A
Date:	13-2-13	Date:	13 2 13	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	08.04.17	New Issue	KJ/DD	

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 95404 MLS
13-01-10





PART LIST

QTY -041	PART NUMBER	DESCRIPTION
X	D3651-041	AFT BASE ASSEMBLY
1	D3651-043	FLANGE WELDMENT
1	D3651-1	GASKET
1	D3651-9	INSIDE DOUBLER
1	D3651-11	GASKET
1	D3651-13	OUTSIDE DOUBLER
58	CR3523-4-02 or NAS9307M-4-02	RIVET

RELEASED 08.03.27

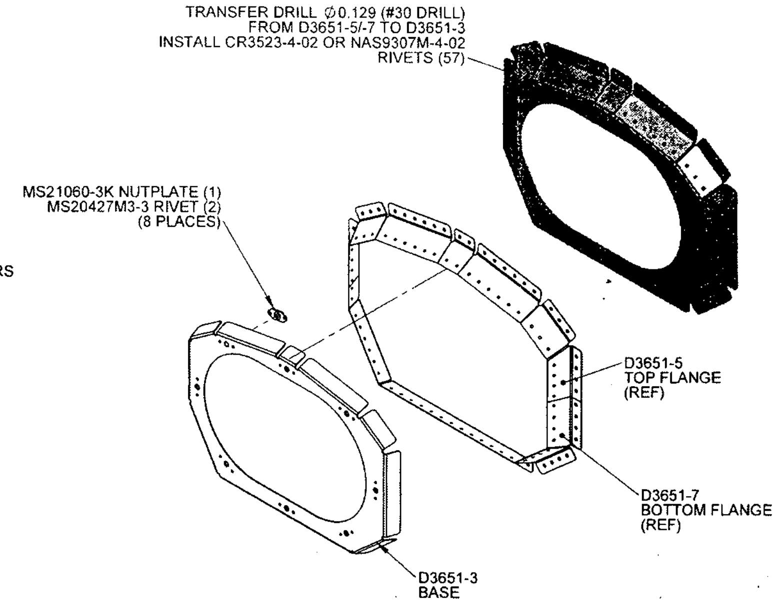
D3651-041 AFT BASE ASSEMBLY

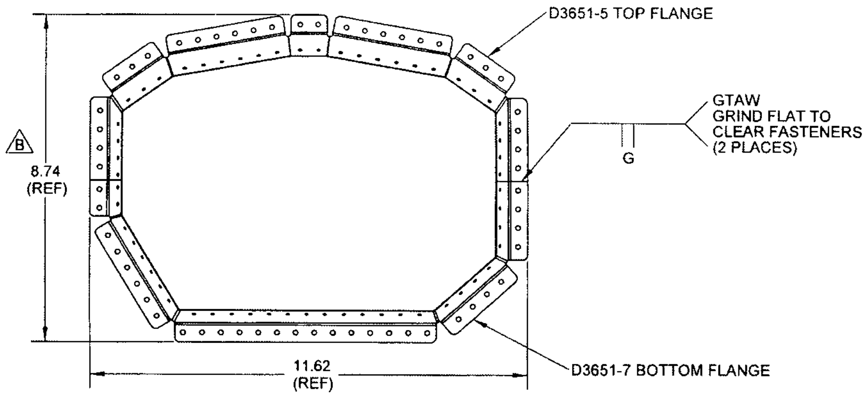
D3651-041 NOTES:
1) SEAL ALL MATING SURFACES AND GAPS USING PROSEAL 700 FIRE WALL SEALANT
2) INSTALL D3651-1 USING 3M HIGH PERFORMANCE CONTACT ADHESIVE 1357
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 1.6 lbs

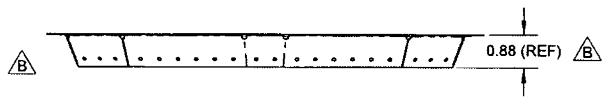
REV.	DESCRIPTION	BY	DATE
B	SHEET 1: GENERAL UPDATE SHEET 2: 8.74 WAS 8.50; 0.88 WAS 0.98; REMOVED ANGLE SHEETS 4, 5, 6, 8 & 9: GENERAL DIMENSIONAL UPDATE SHEET 7: 5.514 WAS 5.504	RF	08.01.07
A	NEW ISSUE	RF	07.11.07

DESIGN	RF	**DART AEROSPACE LTD** HAWKESBURY, ONTARIO, CANADA
DRAWN	RF	
CHECKED		DRAWING NO. D3651 — REV. B — SHEET 1 OF 9
MFG. APPR.		
APPROVED		TITLE AFT BASE ASSEMBLY — SCALE 1:4
DE APPR.		
DATE	08.01.07	

95404







QTY -043	PART NUMBER	DESCRIPTION
X	D3651-043	FLANGE WELDMENT
1	D3651-3	BASE
1	D3651-5	TOP FLANGE
1	D3651-7	BOTTOM FLANGE
16	MS20427M3-3	RIVET
8	MS21060-3K	NUTPLATE
57	CR3523-4-02 or NA9307M-4-02	RIVET

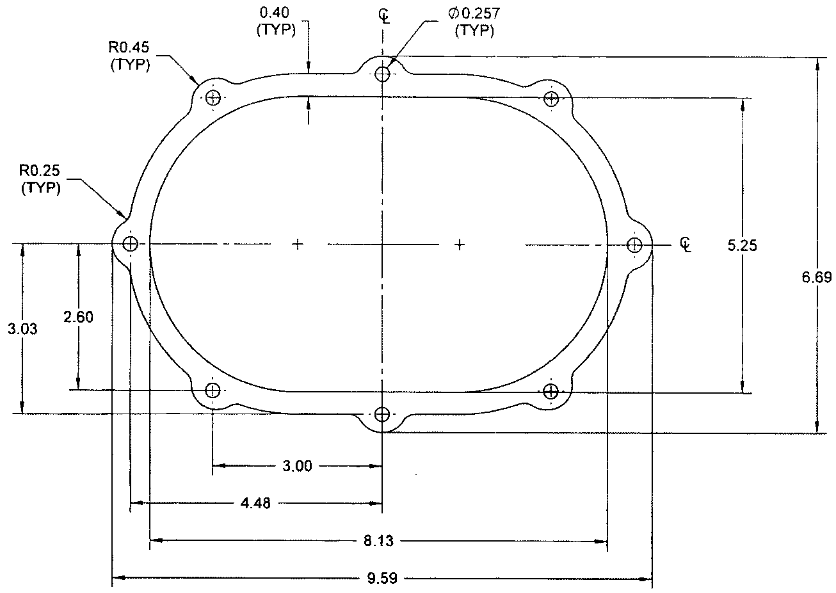
RELEASED 08-03-27

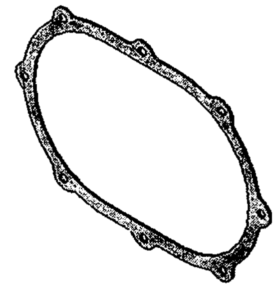
D3651-043 FLANGE WELDMENT

D3651-043 NOTES:
1) WELD PER QSI 004
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 0.76 lbs

DESIGN	RF	**DART AEROSPACE LTD** HAWKESBURY, ONTARIO, CANADA
DRAWN	RF	
CHECKED		DRAWING NO. D3651 — REV. B — SHEET 2 OF 9
MFG. APPR.		
APPROVED		TITLE AFT BASE ASSEMBLY — SCALE 1:3
DE APPR.		
DATE	08.01.07	

95404





D3651-1 GASKET

NOTES:
1) MATERIAL: THERMO-CHEM P/N G-89, (REF. 0.060 THICK)
POSSIBLE SUPPLIER: A.R. THOMSON GROUP
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) PART IS SYMMETRIC ABOUT ℄
8) WEIGHT: 0.09 lbs

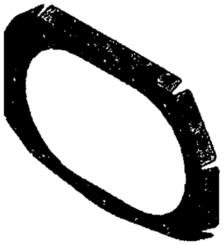
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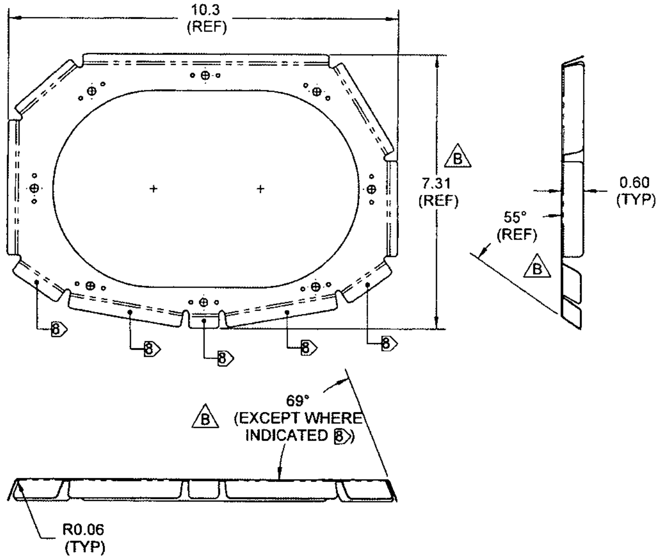
DESIGN	RF
DRAWN	RF
CHECKED	
MFG. APPR.	
APPROVED	
DE APPR.	
DATE	08.01.07

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

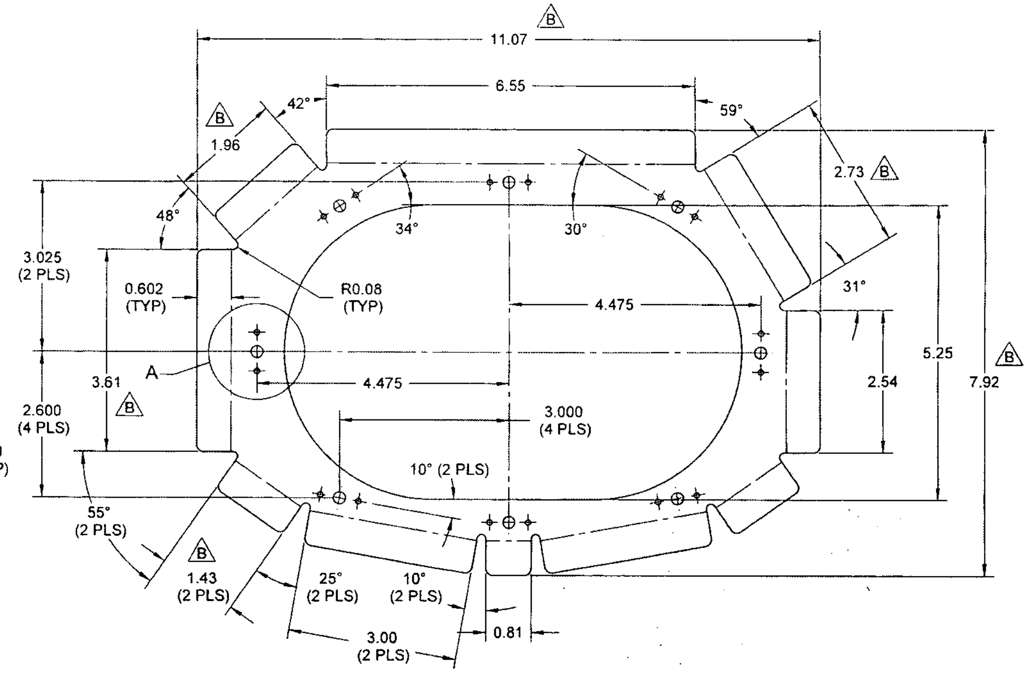
DRAWING NO. D3651 — REV. B — SHEET 3 OF 9
TITLE: AFT BASE ASSEMBLY — SCALE 1:2

95404

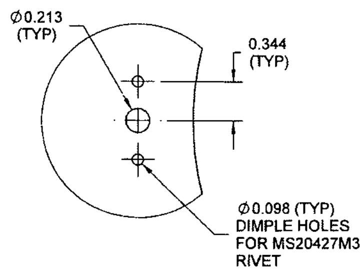




D3651-3 BASE
(MAKE FROM D3651-3F FLAT PATTERN)



D3651-3F FLAT PATTERN



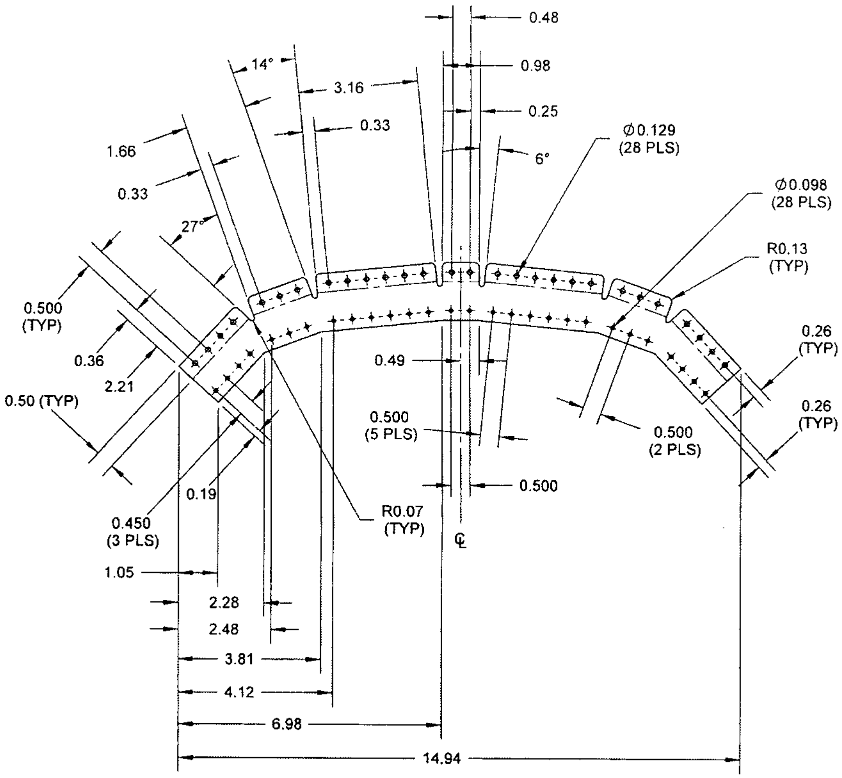
DETAIL A

NOTES:
1) MATERIAL: AISI 304/316 STAINLESS STEEL 0.018 (26 GAUGE) SHEET, PER MIL-S-5019
(REF. DART SPEC. M304S26GA)
2) FINISH: NONE
3) TOLERANCES: PER DART GSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 0.27 lbs
8) BEND TO 55° WHERE INDICATED

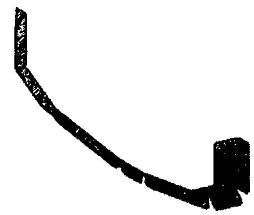
08.03.27

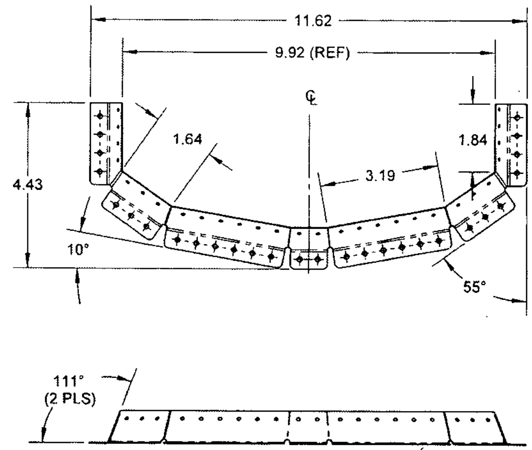
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
DRAWN	RF	DRAWING NO. D3651 — REV. B — SHEET 4 OF 9
CHECKED		
MFG. APPR.		
APPROVED		TITLE: AFT BASE ASSEMBLY — SCALE 1:2
DE APPR.		
DATE	08.01.07	

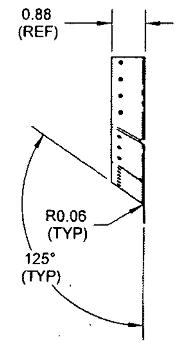
95404



D3651-5F FLAT PATTERN B





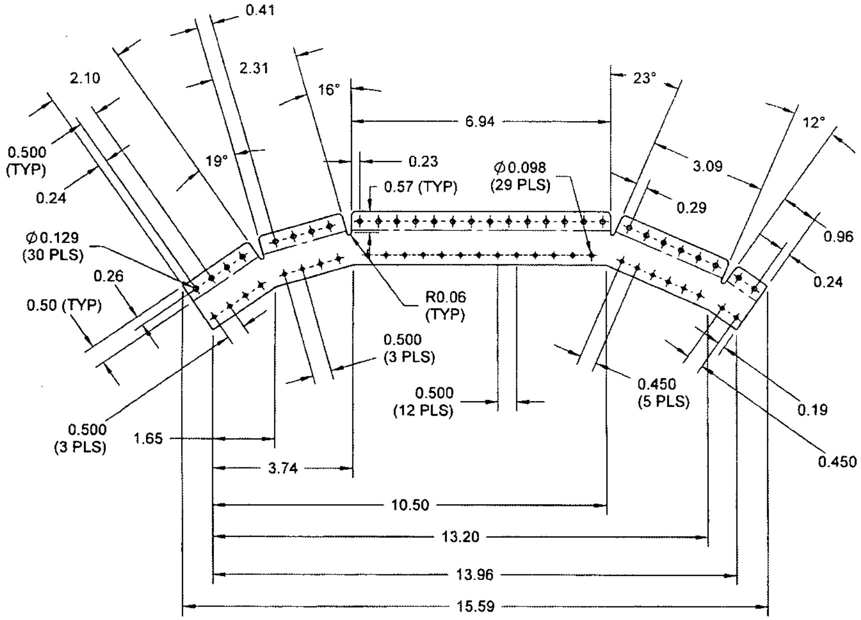


D3651-5 TOP FLANGE BEND DETAIL B
(MAKE FROM D3651-5F FLAT PATTERN)

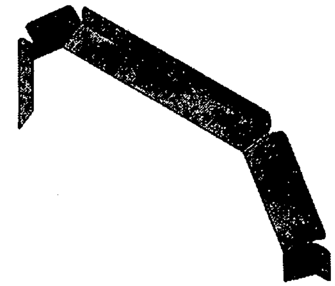
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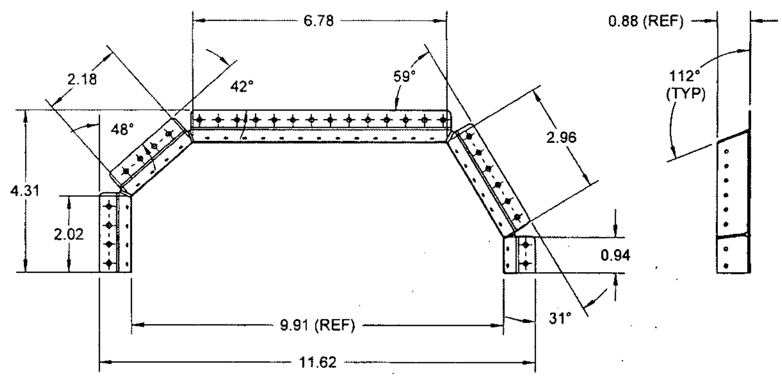
NOTES:
1) MATERIAL: AISI 304/316 STAINLESS STEEL 0.018 (26 GAUGE) SHEET, PER MIL-S-5019 (REF. DART SPEC. M304S26GA)
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 0.02 lbs

DESIGN	RF	**DART AEROSPACE LTD** HAWKESBURY, ONTARIO, CANADA
DRAWN	RF	
CHECKED		DRAWING NO. D3651 — REV. B — SHEET 5 OF 9
MFG. APPR.		
APPROVED		TITLE AFT BASE ASSEMBLY — SCALE 1:3
DE APPR.		
DATE	08.01.07	



D3651-7F FLAT PATTERN B





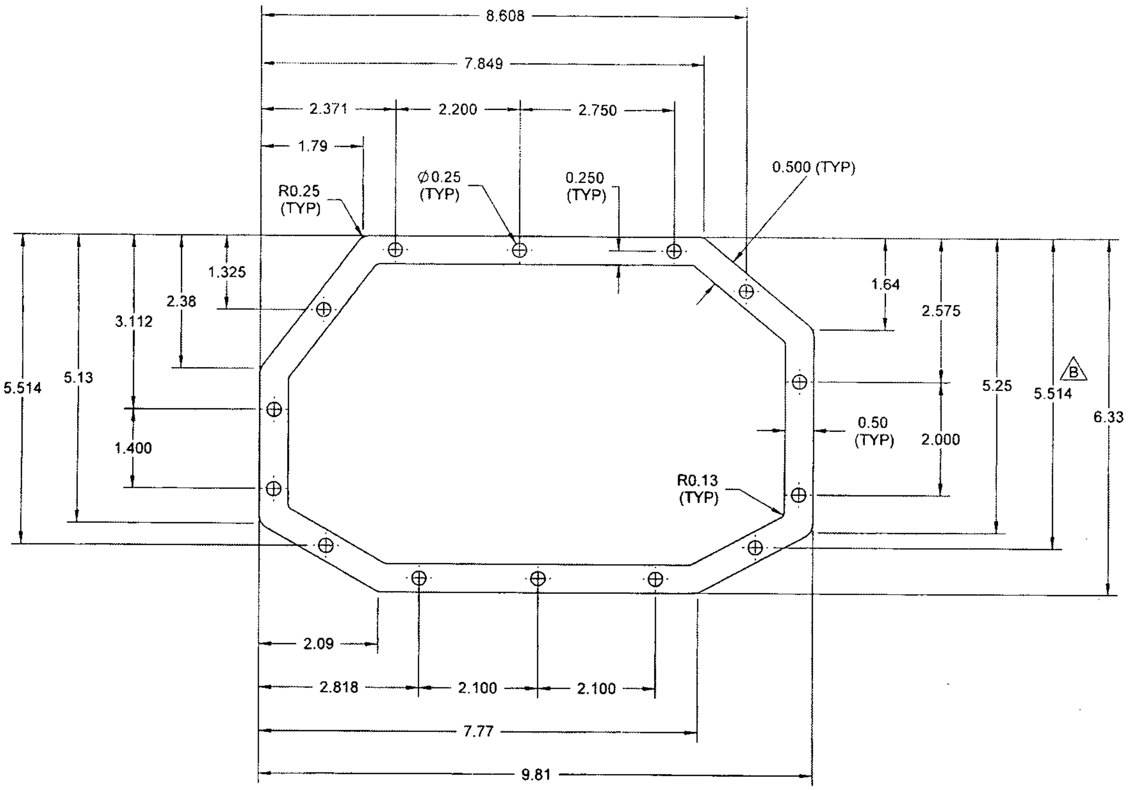
D3651-7 BOTTOM FLANGE BEND DETAIL B
(MAKE FROM D3651-7F FLAT PATTERN)

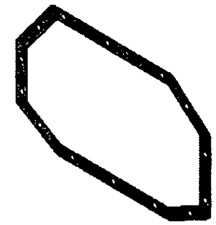
NOTES:
1) MATERIAL: AISI 304/316 STAINLESS STEEL 0.018 (26 GAUGE) SHEET, PER MIL-S-5019 (REF. DART SPEC. M304S26GA)
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 0.02 lbs

08.03.27

DESIGN	RF	**DART AEROSPACE LTD** HAWKESBURY, ONTARIO, CANADA
DRAWN	RF	DRAWING NO. D3651 — REV. B — SHEET 6 OF 9
CHECKED		
MFG. APPR.		
APPROVED		TITLE AFT BASE ASSEMBLY — SCALE 1:3
DE APPR.		
DATE	08.01.07	

95/04



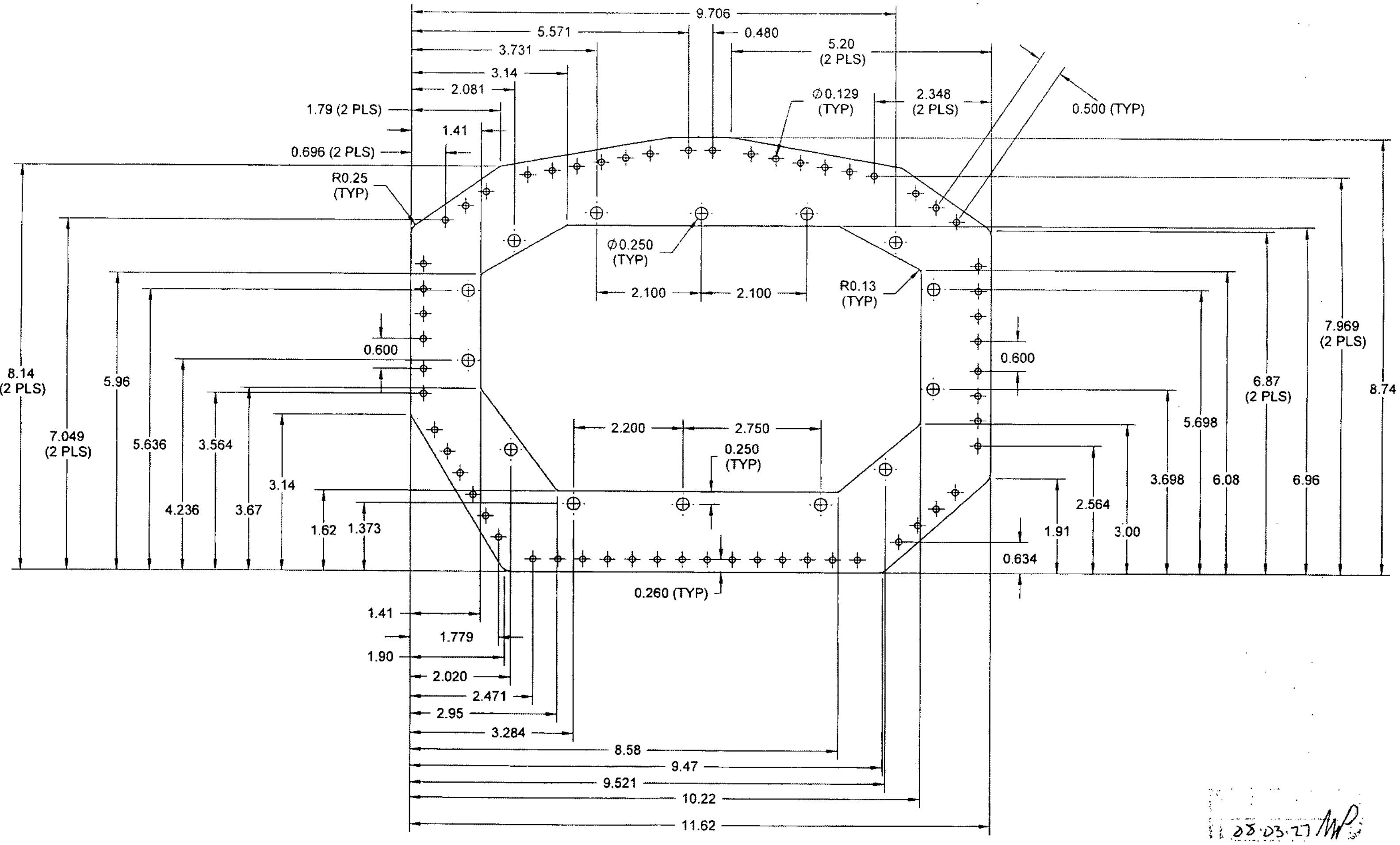


D3651-9 INSIDE DOUBLER

08.03.27

NOTES:
1) MATERIAL: AISI 304/316 STAINLESS STEEL 0.018 (26 GAUGE) SHEET, PER MIL-S-5019 (REF. DART SPEC. M304S26GA)
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 0.07 lbs

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
DRAWN	RF	
CHECKED		DRAWING NO. D3651 — REV. B — SHEET 7 OF 9
MFG. APPR.		
APPROVED		TITLE: AFT BASE ASSEMBLY — SCALE 1:2
DE APPR.		
DATE	08.01.07	



NOTES:
1) MATERIAL: THERMO-CHEM P/N G-89, (REF. 0.060 THICK)
POSSIBLE SUPPLIER: A.R. THOMSON GROUP
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 0.2 lb

D3651-11 GASKET (B)

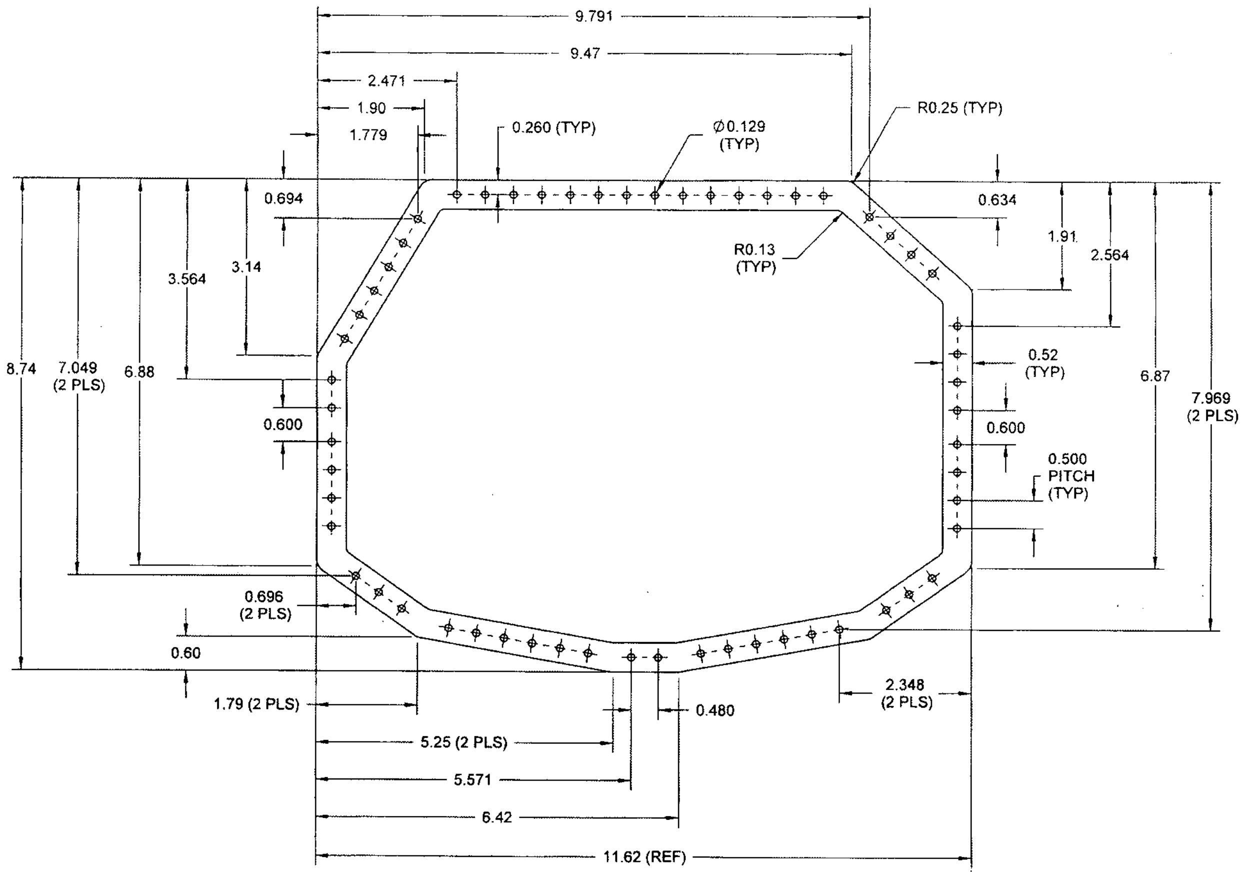
DESIGN	RF
DRAWN	RF
CHECKED	
MFG. APPR.	
APPROVED	
DE APPR.	
DATE	08.01.07

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. D3651 — REV. B — SHEET 8 OF 9

TITLE: AFT BASE ASSEMBLY — SCALE 1:2

95Y/04



08.03.27

D3651-13 OUTSIDE DOUBLER B

NOTES:

1) MATERIAL: AISI 304/316 STAINLESS STEEL 0.018 (26 GAUGE) SHEET, PER MIL-S-5019
(REF. DART SPEC. M304S26GA)
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 0.10 lbs

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
DRAWN	RF	
CHECKED		DRAWING NO. D3651 — REV. B — SHEET 9 OF 9
MFG. APPR.		
APPROVED		TITLE: AFT BASE ASSEMBLY — SCALE 1:2
DE APPR.		
DATE	08.01.07	